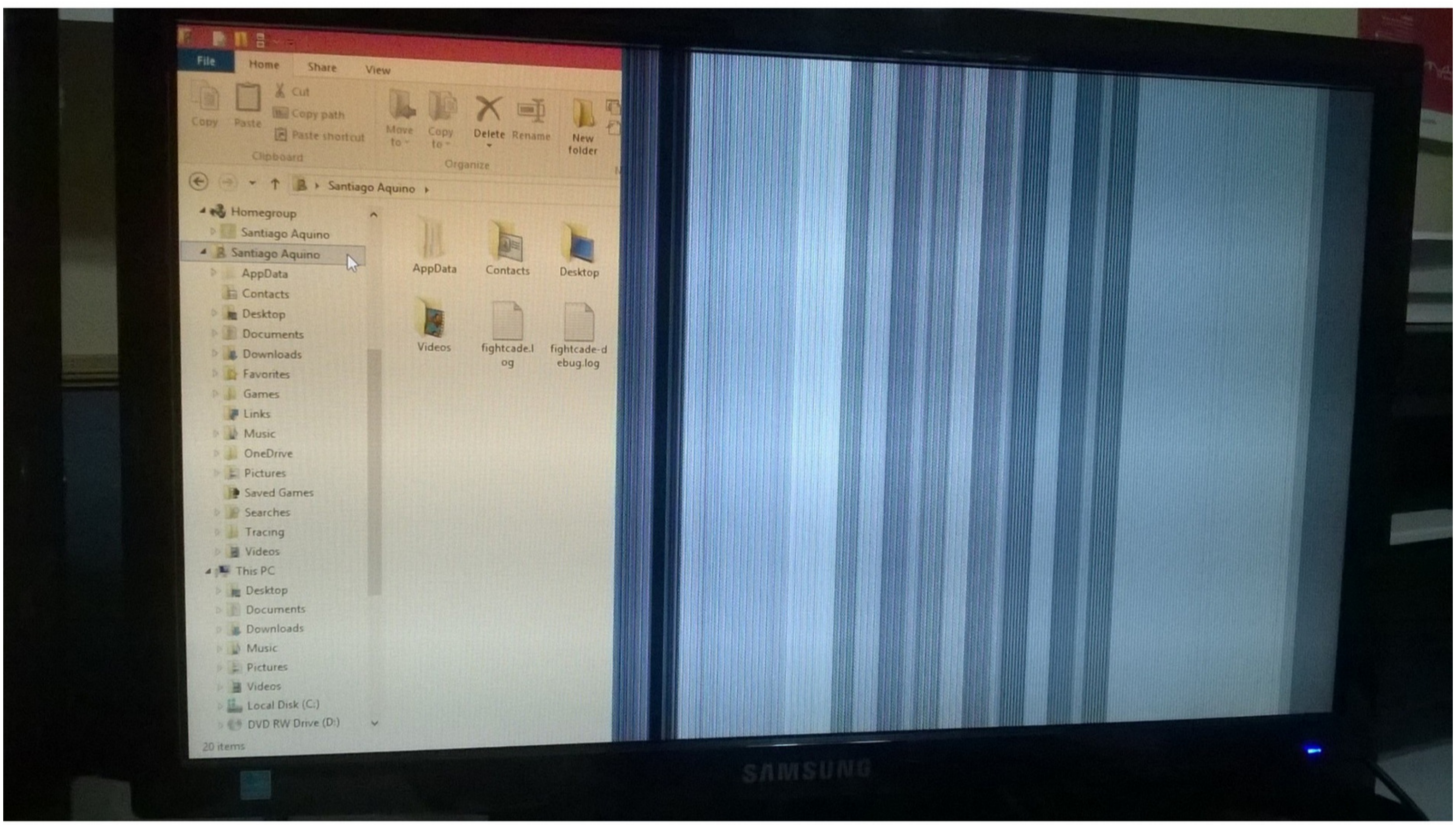
Repairing Samsung SyncMaster SA300 Flicker and Vertical Lines

This guide will show you how to fix an LCD or LED display with flickering or solid vertical lines. It's performed on a Samsung Syncmaster SA300 LED Monitor, but could be applied to similar monitors with similar issues.

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INTRODUCTION

The Samsung Syncmaster SA300 series seems to have a common issue with flickering bars, solid bars, and "sliced" screen area, caused by faulty flex ible ribbon ("flex") connectors between the display and one PCB. This guide fixes this.

v.1: I've marked this as "complete" because the text is complete, I just didn't happen to take photos of the process.

TOOLS:

- Spudger (1)
- Heat Gun (1)

This guide REQUIRES a heat gun. Conventional hair dryers will not reach the temperature needed without damaging other components from prolonged exposure to heat. (or at all)

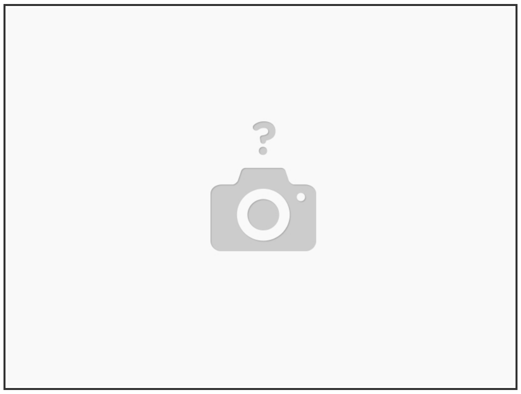
- Kapton Tape (1)

Replaceable with Aluminum tape.

PARTS:

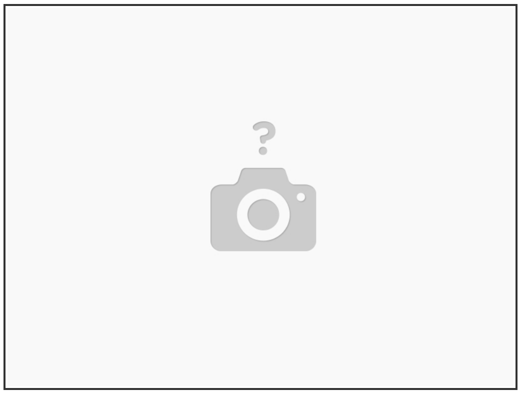
- Video output (1)

Step 1 — Open up the monitor.



- Place the monitor face-down on a mat, soft clean microfiber cloth, or even a dry towel, with the stand (bottom) facing toward you.
- Remove the stand by firmly pulling on the small, cylindrical portion while applying pressure on the swiveling mount.
- Work your way around the edge of the monitor using a plastic spudger, guitar pick, or smooth metal spudger. There's a large metal casing around the display, giving you some room for error as you work the plastic clips around it.
- detach the small cables by pulling on the connectors and wiggling them off with spudgers, then remove the ZIF ribbon by flipping the "back" of the connector's black flipper upward.
- Remove the display and single PCB from the front mount by pulling up, then forward, clearing the small metal clip at the bottom of the display.

Step 2 — Prepare the display for repair.

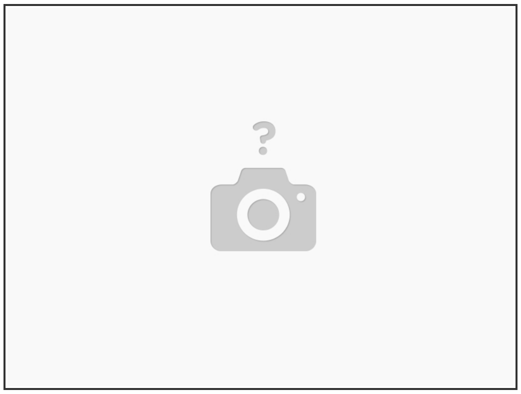


- Place the display face-down on a flat, heat-resistant surface. Ideally this is soft enough not to damage the fragile front of the display, and doesn't conduct heat like metal would. I used a thin fabric mat.
- Fully remove the plastic shielding over the PCB by pulling up on the thick plastic with a spudger or your fingernails, taking care not to damage the aluminum tape. The black tape at the top will most likely have to be cut or pulled away, making it useless. Put aside.

ⓘ While you could replace the aluminum tape with your own, the one that comes with the display can withstand being pulled out once or twice and has helpful holes that line up with dimples on the metallic back of the display for re-placement.

- Lightly stick aluminum tape or "Kapton" tape, either on it's own or with attached aluminum foil, to shield all components but the long set of contacts at the top of the PCB, and the flex cables attached to them.

Step 3 — Heatgun repair.



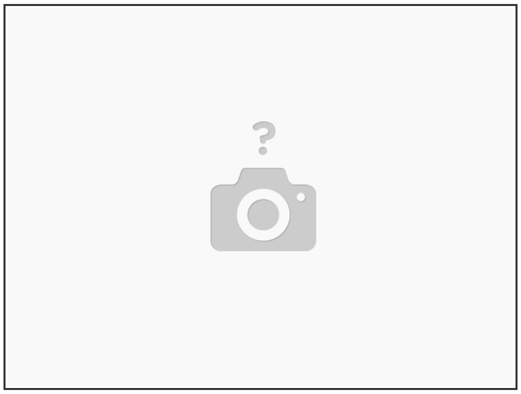
- Hold a heatgun at one centimeter from one of the flexible ribbons, using your non-dominant hand, moving slightly to cover the whole thing, or staying still if using a flat nozzle. Set to 300 ° C and fire for one minute.

ⓘ Hold the spudger with the hand you write with, and the gun with the other. If you're prone to trembling or need to hold the gun in both hands, do so, but have a place to leave it while you use the spudger.

- Turn off and move the heat gun away, then using your dominant hand, firmly press a plastic spudger or guitar pick against the ribbon cable, running it from one direction to another, at least twice.

- Repeat process with all ribbon cables.

Step 4 — Testing and finishing.



- If you used a conductive material like Aluminum to shield the PCB, remove it. Temporarily shield it with non-conductive tape, for example, lightly apply scotch tape to it, to prevent a shortcircuit.
- Re-place the front of the bezel, the connector and logic board assembly, and keep them stuck to the monitor using tape. Re-connect all internal cables, then connect a working display output and a power cable.
- ⚠ It's obviously dangerous to test a display without covering up it's components, but it's extremely tedious to remove the entire bezel assembly over and over. Use thick, non-conductive gloves, exercise caution.
- Turn on the monitor, propping it against something solid, or having someone hold it in position. Run tests, for example a full-screen video or a full-screen "stuck pixel fixer"
- If the problem reappears, re-apply insulation to the top PCB and repeat step 3.
- If the problem does not reappear, remove the tape, re-apply the thick plastic shield using scotch or kapton tape in place of the black tape, and re-assemble the bezel.
- ⓘ After making sure all cables are in place and secured, simply place the back of the case on top of the monitor, align it correctly, and push down along the perimeter.

This fix is not guaranteed, as the process isn't the same used to attach the flex cables in the first place. It's still a tried-and-true method of dealing with this particular issue.

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